

CHANGE ISSUE

ASA MASPS REV -

Tracking Information (committee secretary only)	
Change Issue Number	3
Submission Date	11/18/02
Status (open/closed/deferred)	Closed
Last Action Date	4/23/03

Short Title for Change Issue:	Processing of Ownship Data Prior to Transmission
-------------------------------	--

MASPS Document Reference:		Originator Information:	
Entire document (y/n)		Name	J. Stuart Searight
Section number(s)	2.4.3	Phone	(609) 485-5036
Paragraph number(s)		E-mail	Stuart.Searight@faa.gov
Table/Figure number(s)		Other	

Proposed Rationale for Consideration (originator should check all that apply):	
<input type="checkbox"/>	Item needed to support of near-term MASPS/MOPS development
X	DO-260/ED-102 1090 MHz Link MOPS Rev A
X	ADS-B MASPS
	TIS-B MASPS
X	UAT MOPS
<input type="checkbox"/>	Item needed to support applications that have well defined concept of operation
<input type="checkbox"/>	Has complete application description
<input type="checkbox"/>	Has initial validation via operational test/evaluation
<input type="checkbox"/>	Has supporting analysis, if candidate stressing application
<input type="checkbox"/>	Item needed for harmonization with international requirements
<input type="checkbox"/>	Item identified during recent ADS-B development activities and operational evaluations
<input type="checkbox"/>	MASPS clarifications and correction item
<input type="checkbox"/>	Validation/modification of questioned MASPS requirement item
<input type="checkbox"/>	Military use provision item
X	New requirement item (must be associated with traffic surveillance to support ASAS)

Nature of Issue:	<input type="checkbox"/> Editorial	<input type="checkbox"/> Clarity	<input type="checkbox"/> Performance	X	Functional
<p><u>Issue Description:</u></p> <p>Some ADS-B data elements and the conditions under which certain data is transmitted require the processing of ownship information prior to broadcast. The ADS-B MASPS (DO-242A) does not, however, require that these processing functions reside within the ADS-B avionics (see note 1 in §2.1.2.5 of DO-242A). Examples of required processing of ownship data are:</p> <ul style="list-style-type: none"> • applying an offset of reported horizontal position so that it is referenced to the “ADS-B Position Reference Point.” • using the defined criteria for determining if an airplane should be considered airborne or on an airport surface; • Calculation of NIC and NAC (e.g. converting data such as HFOM, VFOM, HPL, and VPL from GPS receivers) and other continuous assessments of the quality of broadcast surveillance data. • Determination of Intent Data from FMS systems (ex. Mode Indicator fields from BDS4,0 and BDS6,2) <p style="text-align: center;">(Continued on next page.)</p>					

Issue Description (continued):

The two link MOPS have taken the position that this processing is to be done outside of ADS-B, at least as a minimum requirement. (See MASPS compliance matrices of both documents: Appendix F of DO-260A and Appendix B of DO-182.)

The August 29, 2002 draft of Section 2 of the ASA MASPS states in §2.4.3 that no interfaces from ASSAP to the ADS-B transmitter will be defined in the initial ASA MASPS.

If this is not where these interfaces to ADS-B are to be specified and required, then there is a hole in the overall ASA documentation suite developed by RTCA SC-186.

Originator's proposed resolution:

A decision needs to be made about where the processing of this data should reside. (It does not necessarily need to be the same answer for all of it.) Is this processing done by ASSAP and delivered to the ADS-B transmitter? Is this processing that should be done internally within the ADS-B system? Or, is this processing that is not going to be defined by any SC-186 document?

I believe this type of processing of ownship data needs to be part of ASSAP. Separation Assurance is not just keeping ownship separated from other aircraft, but it also includes helping other aircraft keep separation from ownship. Further, the ADS-B link MOPS – particularly UAT – have been written towards the ideal that ADS-B is not much more than a MODEM transmitting ownship State and Status information it receives from other on-board avionics and receiving surveillance data from other ADS-B participants, and passing it along to the applications that need it.

Recommendation: Specify the processing of Ownship data needed by ADS-B transmitters in §2.4.3 of the ASA MASPS.

Working Group 4 Deliberations:

December 16-19, 2002: During an editing telecon, it was agreed by the editing committee to address these types of requirements at the MASPS level within the ASA Transmitting Participant Subsystem requirements. (See §3.1.1 Surveillance Transmit Processing (STP) Subsystem Requirements.

What still needs to be determined is if the MOPS level requirements will be contained within the ASSAP MOPS, ADS-B link MOPS, or as a stand alone document.

April 22, 2003: This Issue Paper was reviewed and discussed by WG4 at the WG4 meetings held April 22 & 23, 2003 at RTCA, Inc. WG4 agreed that the MASPS level requirements requested by this Issue Paper are being drafted in §3.1. This Issue Paper is therefore considered CLOSED. The question as to where the MOPS level requirements should reside was deferred by WG4 until the initial ASA MASPS is complete.